

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2001-069280

(43)Date of publication of application : 16.03.2001

(51)Int.Cl. H04N 1/00
B65H 31/00

(21)Application number : 11-238586

(71)Applicant : CANON INC

(22)Date of filing : 25.08.1999

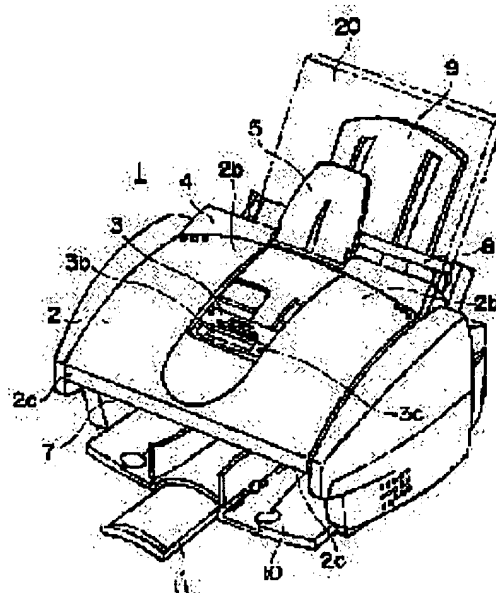
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(54) IMAGE READER AND COMPOUND DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To surely receive a read original and to prevent erroneous operation.

SOLUTION: An original eject tray 2 is constituted so as to be freely opened/ closed with a shaft 2c as a rotary shaft. In a closed state, an operating part and an original placing part 4 are covered with the original eject tray 2 and original reading operation is disabled. In an opened state, the said operating part and original placing part 4 are exposed and the original eject tray 2 is fixed at a position to place the original ejected from an eject port.



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CLAIMS

[Claim(s)]

[Claim 1] A conveyance means to convey a sheet-like manuscript, and a read means to read the manuscript conveyed, The control panel which has the display which displays the control unit and condition for an operator, It is constituted free [closing motion] to the body of equipment, and has the configuration in which a display is exposed for the control unit of said control panel with a wrap in the condition of having closed. The image reader characterized by having a manuscript discharge tray loading the manuscript which is read by said present read means in the condition of having opened, and is discharged.

[Claim 2] The configuration of said manuscript discharge tray is the image reader of claim 1 which is the concave configuration in which a display is exposed for the control unit of said control panel with a wrap in the condition of having closed, and is characterized by making the width-of-face dimension of this concave configuration section smaller than the minimum manuscript width-of-face dimension in which read is possible with said read means.

[Claim 3] Compound equipment characterized by having the discharge section further in order to load the sheet printed by the image reader according to claim 1 or 2, the printing means for printing an image, and said printing means.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] About devices, such as multifunction equipment which has facsimile, a copying machine, scanners, and these compound functions, making especially a sheet-like manuscript convey, an image is read and this invention relates to the image reader equipped with the sheet discharge tray which makes the read manuscript discharge.

[0002]

[Description of the Prior Art] It of multifunction equipment is shown and explained to drawing 5 as a sheet discharge tray of the conventional reader. First, a control unit 3 is in the top-face near side of the body 1 of equipment, a base 4 is in the back side of a control unit 3 every manuscript on the top face of the body 1 of equipment, and the manuscript loading auxiliary tray 5 has clung to the body 1 of equipment. Moreover, the read station and the manuscript conveyance section of a manuscript were constituted by the lower part of a control unit 3, and the manuscript discharge tray 2 has clung to the body near side of equipment. moreover -- many -- an image is formed of the Records Department in the interior of the body of equipment, and the recording paper with which the detail paper holder 8 which contains the record sheet of several sheets is in the back of an equipment body, and is conveyed one sheet at a time at the time of record is delivered [paper] to it and loaded by the near side of the body 1 of equipment on the recording paper discharge section 10 of the manuscript discharge tray 2 lower part, and the recording paper discharge auxiliary tray 11. Moreover, there is a connector which connects an interface cable with a computer in the tooth-back side of the main frame.

[0003] Although this manuscript paper output tray 2 is attached in the main frame in the condition of having jumped out about 100mm to the near side of the body 1 of equipment, the manuscript discharged while making installation area of equipment small by using it for it at the time of the manuscript read more than B5 size, carrying out a drawer to the equipment front shown by the arrow head a about 100mm can be loaded certainly. Moreover, since the detail-paper discharge section is in the manuscript discharge tray lower part, it is formed in the shape of [of KO] a character with ingredients, such as a wire which is seldom conspicuous on a design, and the width of face of the character of KO is about 70mm so that it may not become the obstacle at the time of taking out the discharged detail paper.

[0004]

[Problem(s) to be Solved by the Invention] However, in the above-mentioned conventional example, not pulling out the manuscript discharge tray 2 can also install a manuscript in a base 4 every manuscript, and read actuation can be performed. Therefore, when two or more big manuscripts were read and operated more than B5 size without pulling out a manuscript discharge tray, two or more read manuscripts fell disorderly to the near side of equipment, and there was a fault that handling of manuscript paper was spoiled. Moreover, in order to take out the recording paper by which delivery loading is carried out to a recording paper exhaust port, the magnitude of the manuscript discharge tray in the upper part, especially crosswise magnitude are restrained. For this reason, as mentioned above, the width of face of the manuscript discharge tray of the conventional example is about 70mm, it will be difficult to make a broad manuscript, for example, the manuscript of B4 size, load into a manuscript discharge tray certainly, and the manuscript fall after discharge will arise. Moreover, since the manuscript fell between broad trays when discharging the manuscript of the minimum read width of face of equipment when width of face of a tray was made large, there was also a fault that a tray configuration had to be made into the complicated form instead of the shape of a typeface of simple KO.

[0005] It is common that the function is furthermore substantial in the compound machine of these days, and two or more actuation can be operated to coincidence. For example, even if it can operate read from a control panel during record actuation of equipment and is not installing the manuscript during record actuation, polling reception can also be

carried out by carrying out dial call origination. Therefore, when performing actuation of these plurality in parallel intentionally, it was a convenient function, but when that was not right, after touching the manual operation button accidentally, there was a fault of becoming the factor of an operation mistake.

[0006] The handling of the manuscript after being made in view of the above-mentioned conventional example and reading is easy for this invention, and it aims at offering the image reader which does not have troublesomeness in actuation.

[0007] Moreover, it aims at offering the image reader which can display the condition of equipment certainly, preventing a user's thing to do for an operation mistake.

[0008] Moreover, it is easy and the handling of the discharged recording paper aims at offering the compound equipment which can prevent performing read actuation which is not meant during record.

[0009]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, this invention consists of the following configurations. Namely, a conveyance means to convey a sheet-like manuscript and a read means to read the manuscript conveyed, The control panel which has the display which displays the control unit and condition for an operator, It is constituted free [closing motion] to the body of equipment, and in the condition of having closed, where the configuration in which a display is exposed for the control unit of said control panel with a wrap is had and opened, it has a manuscript discharge tray loading the manuscript which is read by said present read means and discharged.

[0010] Moreover, preferably, the configuration of said manuscript discharge tray is a concave configuration in which a display is exposed for the control unit of said control panel with a wrap in the condition of having closed, and makes the width-of-face dimension of this concave configuration section smaller than the minimum manuscript width-of-face dimension in which read is possible with said read means.

[0011] Moreover, in order to load the sheet preferably printed by the image reader mentioned above, the printing means for printing an image, and said printing means, it has the discharge section further.

[0012]

[Embodiment of the Invention] Drawing 1 and drawing 2 are drawings which express the description of this invention best, and the body perspective view of equipment in the condition that drawing 1 closed the manuscript discharge tray, and drawing 2 are the perspective views of the body of equipment in the condition of having opened the manuscript discharge tray. drawing 1 and drawing 2 -- setting -- 1 -- the body of equipment, and 2 -- a manuscript discharge tray and 3 -- a control panel and 4 -- every manuscript -- a base and 5 -- for a manuscript exhaust port and 8, as for a recording paper installation auxiliary tray and 10, a recording paper stowage and 9 are [a manuscript installation auxiliary tray and 6 / a manuscript width-of-face arrangement slider and 7 / the recording paper discharge section and 11] recording paper discharge auxiliary trays. Moreover, drawing 3 is a perspective view from the tooth-back side of the body of equipment, and there are the parallel interface connector 12 which connects an interface cable with a computer, and a connector 13 linked to a communication line in the tooth-back side of the main frame 1.

[0013] In the state of standby of equipment, the recording paper 20 is set to the recording paper stowage 8 to predetermined number of sheets. The manuscript discharge tray 2 makes it supporting-point 2c near the manuscript exhaust port 7, and is attached in the body of equipment possible [closing motion]. Moreover, in the manuscript discharge tray 2, the configuration of the side which counters to the closing motion supporting-point 2c is a concave configuration, and where the manuscript discharge tray 2 is closed like drawing 1 , it is constituted so that pictorial symbol luminescence display 3c with which manual operation button 3a is altogether hidden on the discharge tray 2, and indicates liquid crystal display section 3b of a control panel 3 and a device status to be may be exposed from the crevice of the discharge tray 2. In addition, although the alarm display which serves both as the cartridge residue insufficient alarm display of the ink of the equipment Records Department, a recording paper insufficient alarm display, and a poor recording paper conveyance display is used by this example as pictorial symbol luminescence display 3c, a display etc. may be arranged during a display, an equipment working display, and communication line use during memory use as others.

[0014] In the condition that the manuscript discharge tray 2 has closed, point 2b of the manuscript discharge tray 2 contacts a base 4 every manuscript, and the inside of a manuscript paper output tray is not in contact with manual operation button 3a of a control panel 3. For this reason, it is not pushed on the manuscript discharge tray 2 in the condition that manual operation button 3a closed. Conversely, in the condition that the manuscript discharge tray 2 is open, since the edge by the side of rotation supporting-point 2c of the manuscript discharge tray 2 is in contact with the stopper section of the body of equipment which is not shown in drawing, a manuscript can be loaded certainly, without a manuscript discharge tray inclining, even if it loads the manuscript of two or more sheets.

[0015] There is concave configuration section 2a of the manuscript discharge tray 2 in this example in the center of

right-and-left **** of the manuscript discharge tray 2, and width of face H is about 85mm. Liquid crystal display section 3b of a control panel 3 and pictorial symbol luminescence display 3c are also arranged in the center of right-and-left **** of a control panel 3, the width of face which doubled liquid crystal display section 3b and pictorial symbol luminescence display 3c is about 70mm, and the display is completely exposed from the concave configuration section. [0016] First, when equipment is printing out waiting, under facsimile reception, or from a computer, it changes into the condition of having closed the manuscript discharge tray 2 like drawing 1 . If the image recording of equipment starts, one sheet of recording paper 20 contained by the recording paper stowage 8 is conveyed at a time by the automatic-recording paper conveyance section constituted inside equipment, and an image is formed in the record paper of the record image formation section constituted inside equipment, and is loaded on the recording paper discharge section 10 and the recording paper discharge auxiliary tray 11. An operator checks that the recording paper is discharged and loaded into the record discharge section 10, and takes out. Also when it is easy to check the existence of the recording paper currently loaded into the recording paper discharge section 10 and it is taken out because it is in the condition of having closed the manuscript discharge tray 2 like drawing 1 , there is no troublesome thing. Moreover, since the manuscript discharge tray 2 has closed, it is in the installation condition which there is no tray in the condition of having jumped out besides equipment, and was felt refreshed, and there is little installation area and it ends. And since concave configuration section 2a to pictorial symbol luminescence display 3c of the manuscript discharge tray 2 which shows liquid crystal display section 3b of a control panel 3 and a device status is exposed, it becomes possible to check the condition of equipments, such as the amount of the insufficient condition of supplies, such as that it is in a thing with waiting equipment, and a receive state, and it is or is [record] under output, or detail paper/ink cartridge, and the memory used.

[0017] furthermore, the compound equipment of this example -- setting -- record -- since dual actuation in which facsimile transmission or the manuscript read actuation as a scanner is possible and which is carried out from the former can be performed even if working, even if there is no manuscript in a base 4 every manuscript, depending on actuation of manual operation button 3a, actuation of the call origination of a communication line etc. will be possible. Therefore, since the manuscript discharge tray 2 has closed and all manual operation button 2a of a control panel 2 is covered to operate only record actuation, touching a manual operation button accidentally and causing malfunction does not arise.

[0018] On the other hand, in reading manuscripts, such as a copy, a scanner, and facsimile transmission, by opening the manuscript discharge tray 2 like drawing 2 , a base 4 is opened wide every manuscript, manual operation button 3a of a control panel 3 appears, and it locates the manuscript discharge tray 2 in the lower stream of a river of the manuscript exhaust port 7. If a manuscript 21 is put and set on a base 4 and the manuscript installation auxiliary tray 5 every manuscript and proper actuation is performed by manual operation button 3a, doubling the width of face of a manuscript with the manuscript width-of-face arrangement slider 6, one manuscript is conveyed at a time by the automatic manuscript conveyance section constituted by the lower part of a control panel 3, and it is read while a manuscript is conveyed by the read station similarly constituted by the lower part of a control panel 3. The read manuscript is discharged from the manuscript exhaust port 7, and is loaded on the manuscript discharge tray 2. When taking out the manuscript into which the operator was discharged and loaded, it can carry out easily by holding a manuscript by concave configuration section 2a of the manuscript discharge tray 2. Then, the manuscript discharge tray 2 is changed into the condition of having closed like drawing 1 . Finally at the time of a copy, the recording paper is taken out.

[0019] Since the card is assumed as the minimum manuscript which can be used with the equipment of this example, the minimum width of face of a manuscript is set as about 89mm. That is, it is constituted so that the condition of having narrowed the manuscript width-of-face arrangement slider 6 to min in drawing 2 may be set to about 89mm. Therefore, since width of face is wider than about 85mm of the width of face H of concave configuration section 2a of the manuscript discharge tray 2, even if the manuscripts loaded into the manuscript discharge tray 2 are the minimum original stripes of an equipment specification, a manuscript does not fall from concave configuration section 2a. That is, even if it is the manuscript of all the magnitude of an equipment specification, the manuscript discharge tray 2 can be loaded certainly.

[0020] Drawing 4 is a sectional view in the condition of having opened the manuscript discharge tray 2 of the compound equipment of this example. When reading a manuscript image for facsimile transmission etc., one manuscript laid in the base 4 and the manuscript installation auxiliary tray 5 every manuscript is incorporated at a time by feed roller 21a, it is sent by conveyance roller 21b, and manuscript read head 21c is passed. At this time, an image is read by manuscript read head 21c which has an optoelectric transducer etc., and that image data is stored in the memory of ***** etc. The manuscript which read finished is discharged by discharge roller 21d on the manuscript discharge tray 2. If the manuscript discharge tray 2 is closed, every manuscript, a base 4 and a control panel 3 will be covered on the manuscript discharge tray 2, and the read of a manuscript cannot do them.

[0021] On the other hand, in case an image is printed, the recording paper contained by the recording paper stowage 8 is conveyed by the Records Department 22 with a conveyance roller, the image according to image data is formed there, and it is discharged by the recording paper discharge auxiliary tray 11.

[0022] With the compound equipment of this example, it is closed by the above configuration and the manuscript discharge tray for laying the read manuscript is operated as a case by it as covering of the manuscript installation base for manuscript read, and a control unit. Thereby, the operation mistake of a control unit can be prevented. Moreover, a display does not cover by making the configuration of a manuscript discharge tray into a concave, but also where it is closed, the contents of a display can be checked by looking. Moreover, when not using a read station, while being able to reduce the installation area of equipment, it becomes easy to check the existence of the discharged printed form. Moreover, by making width of face of a crevice smaller than the minimum manuscript width of face, it is stabilized and the manuscript in which read is possible can be laid in a discharge tray.

[0023] In addition, even if it applies this invention to the system which consists of two or more devices (for example, a host computer, an interface device, a reader, a printer, etc.), it may be applied to the equipments (for example, a copying machine, facsimile apparatus, etc.) which consist of one device.

[0024]

[Effect of the Invention] according to [as explained above] this invention -- a manuscript discharge tray -- a near manuscript exhaust port -- closing motion -- it considers as the configuration attached in the body of equipment pivotable, and a manuscript discharge tray is made into a concave configuration, it is that a display exposes the manual operation button of equipment with a wrap in the condition that the manuscript discharge tray has closed, and the check by looking of the contents of a display is enabled, preventing the operation mistake of a control unit. Moreover, when not using a read station, while being able to reduce the installation area of equipment, it becomes easy to check the existence of the discharged printed form. Moreover, by making the width-of-face dimension of the concave configuration section smaller than the minimum manuscript width of face in which read is possible, it is stabilized and the manuscript in which read is possible can be laid in a discharge tray.

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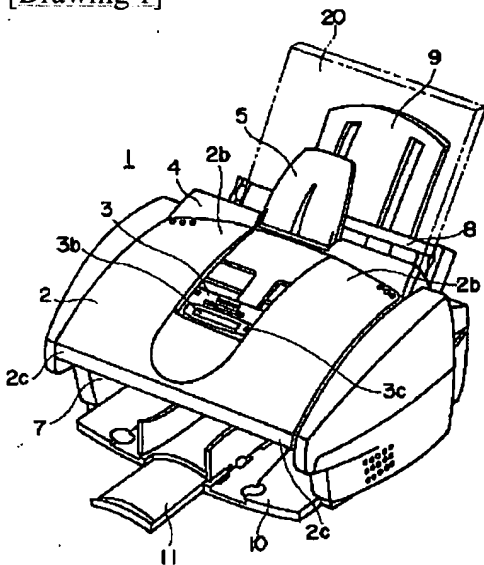
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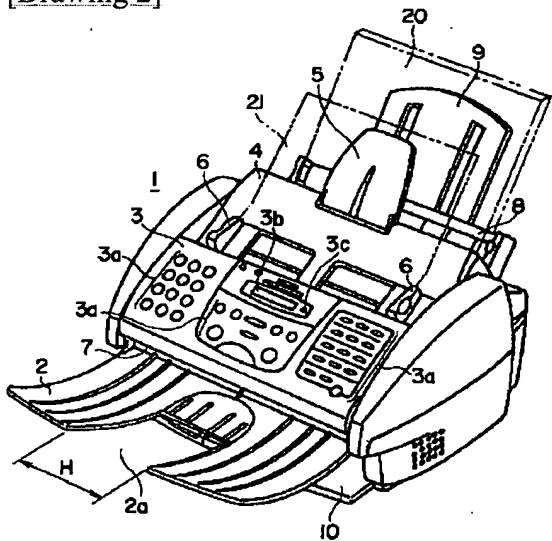
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DRAWINGS

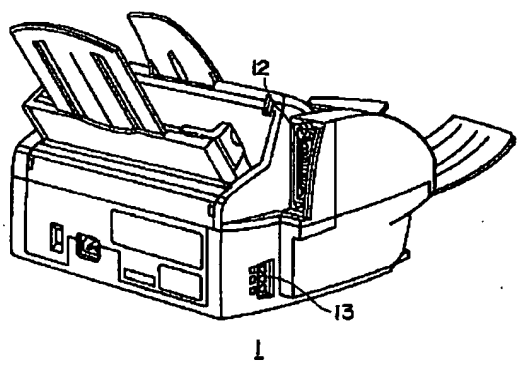
[Drawing 1]



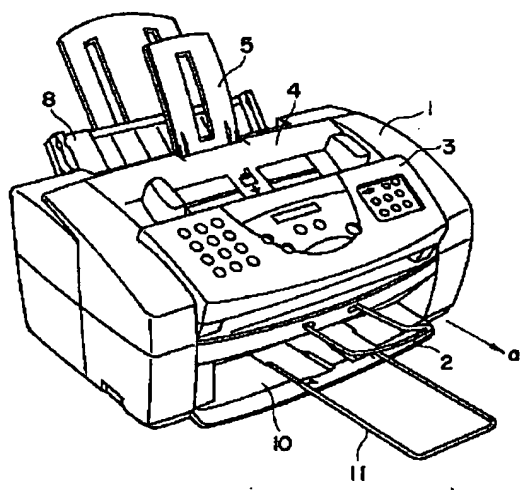
[Drawing 2]



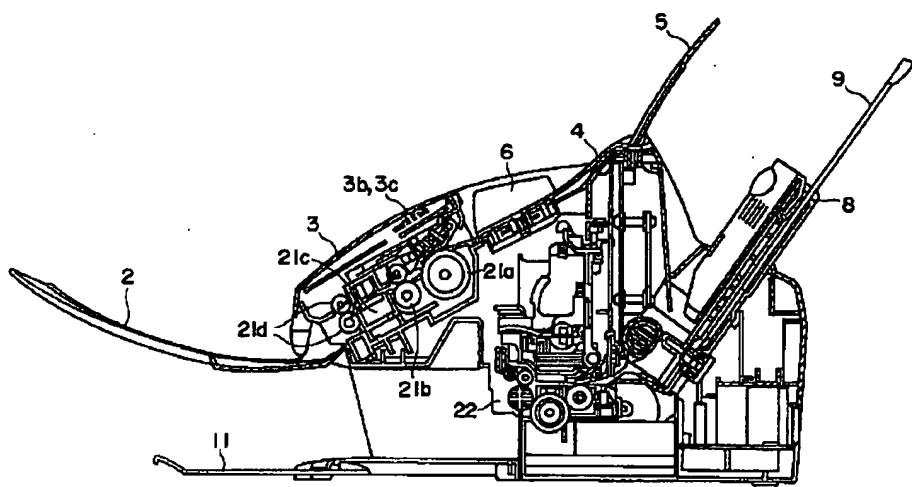
[Drawing 3]



[Drawing 5]



[Drawing 4]



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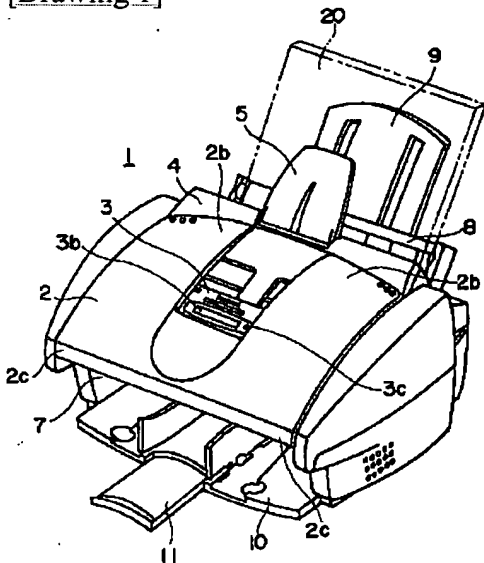
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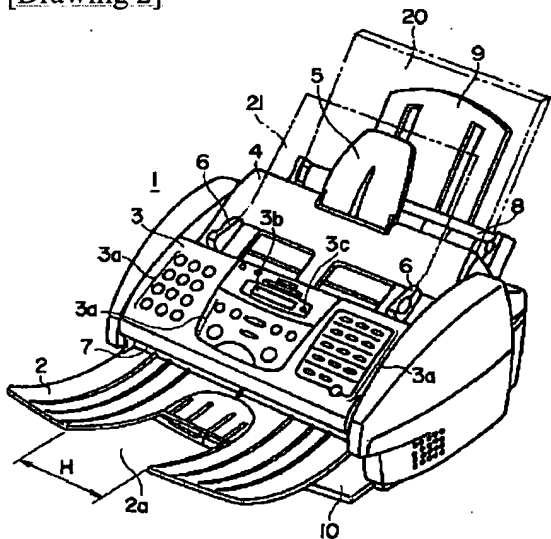
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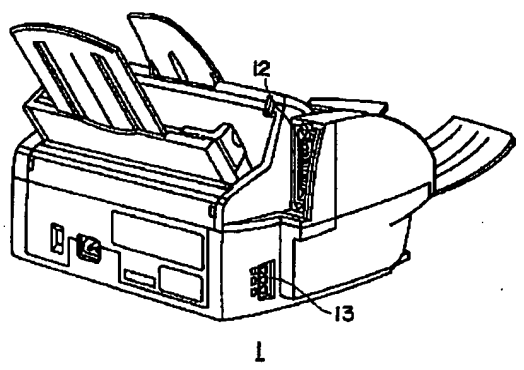
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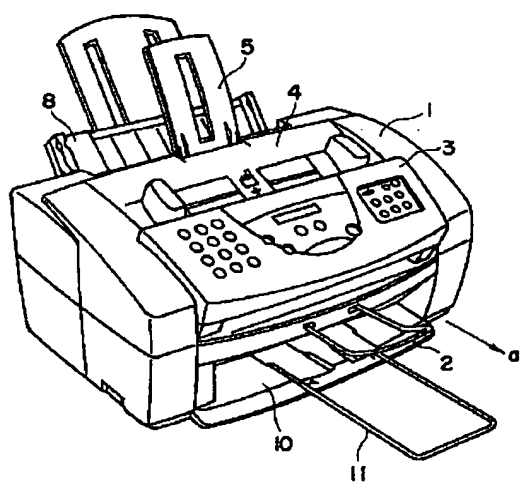
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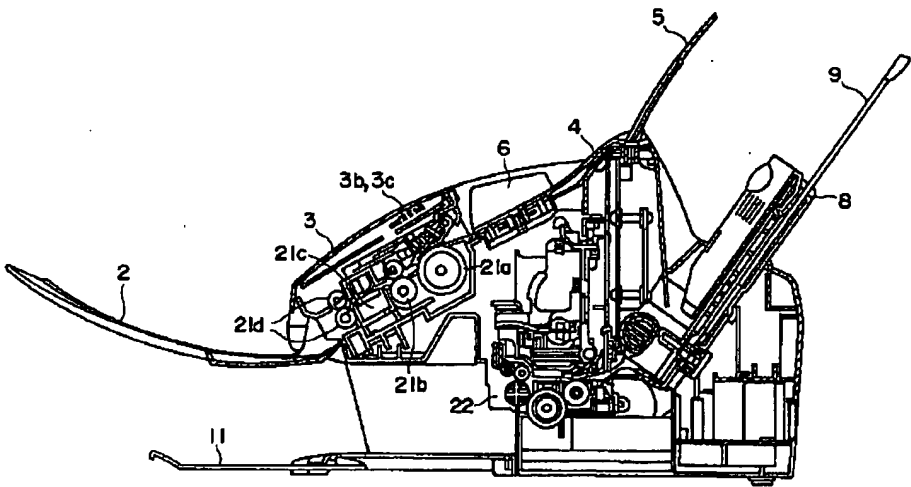
[Drawing 3]



[Drawing 5]



[Drawing 4]



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